

## CLAIMS

We claim:

1. A catalyst comprising:  
5 a metal oxide support;  
a coating comprising zinc on the metal oxide support; and  
palladium in contact with said coating;  
wherein the catalyst is possesses a volumetric productivity of at least 10,000 ml  
H<sub>2</sub> / ml catalyst-hr.  
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2. A method of alcohol steam reforming comprising passing water and an alcohol in  
contact with the catalyst of claim 1 under conditions sufficient to obtain a volumetric  
productivity of at least 10,000 ml H<sub>2</sub> / ml catalyst-hr.
- 15 3. The method of claim 2 wherein the alcohol is methanol.
4. The method of claim 3 wherein the water and alcohol are contacted with the  
catalyst at a temperature in the range of 250 to 320 °C.  
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5. A method of making a catalyst, comprising the steps of:  
providing a solid metal oxide support;  
adding a solution comprising dissolved zinc to the solid metal oxide support;  
adding a base to increase pH; and  
subsequent to at least a portion of the step of adding a base, depositing a metal  
25 selected from the group consisting of Pd.
6. A catalyst made by the method of claim 5.

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